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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/540,129

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Hitoshi Inoue

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EXAMINER

NILAND, PATRICK DENNIS

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

12/02/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/540,129	<b>Applicant(s)</b> INOUE ET AL.	
	<b>Examiner</b> Patrick D. Niland	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2008 and 12 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/21/05 &amp; 6/27/07</u> .                                   | 6) <input type="checkbox"/> Other: _____                          |

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1. The amendments of 8/14/08 and 9/12/08 have been entered. Claims 1-6 are pending.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

A. The claims recite “in a predetermined amount”. There is no disclosure of “in a predetermined amount nor what is required of a predetermination in the originally filed specification. The newly added scope resulting from “in a predetermined amount” is new matter.

B. The instant claims recite “characterized in that the acidic groups in said block copolymer have been neutralized by addition of said alkali in a predetermined amount M that satisfies the following equation:

$$A \leq M \leq (2 \times B)$$

wherein:

A is an amount of said alkali to be added for obtaining an infrared absorption intensity as low as 80% of an upper limit of infrared absorption intensity ascribed to ionic groups to be formed upon addition of an excess amount of said alkali to said block copolymer, and

B is a smallest amount of said alkali to be added to reach said upper limit of infrared absorption intensity.” There is not basis in the originally filed specification for this language and this language is substantially different than that of the originally filed application, particularly "a content of said alkali is such that , when an infrared absorption intensity ascribable to ionic groups to be formed upon addition of an excess amount of said alkali to said block copolymer is supposed to be 100%”. There is no suggestion that this “excess” is not an equivalent excess that is defined as giving the 100% absorption of the instant claims. Any change in scope caused by the new claim language that varies from the originally presented language is new matter. If the change in scope is one that removes scope, see *Ex parte Grasselli* and *In re Wertheim* (both cited in MPEP 2100). The newly recited material clearly changes the amount of neutralizing agent which is encompassed.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat.

Application Publication 2004/0239738 Watanabe.

Watanabe discloses an aqueous composition containing water, pigment or water insoluble dye (the instant specification includes the C.I. Vat Blues of section [0049] within the scope of water insoluble dyes and the acid and basic dyes of section [0046]) since it is the examiner's position that dye and pigment are often used interchangeably with “pigment” often referencing insolubility such that those pigments of the reference which are insoluble in water

but soluble in organic solvent fall within the scope of the instant claimed water insoluble dyes of the instant claims 1, 4, and 6 necessarily and inherently, and block copolymer which may contain the instantly claimed vinyl ether structure and hydrophilic and hydrophobic segments. Watanabe discloses neutralizing carboxylic acid groups on this polymer using amounts of neutralizing agent falling within the scope of the instantly claimed amount of neutralizing agent at section [0106]. See the abstract; sections [0013]-[0014], [0018], [0044]-[0051], particularly [0049], [0056]-[0059], from which the ordinary skilled artisan will understand that the dispersing ability of the polymer necessarily aids in dispersing of the pigment/dye which it encapsulates (see also section [0082]), sections [0060] which encompasses all vinyl polymers, [0070] which encompasses the instantly claimed polyvinyl ether structure, [0076]-[0082], [0104], which discloses the instantly claimed hydrophilic and hydrophobic segments and the fact that the copolymers may be block copolymers, [0106], which discloses using amounts of alkali (section [0059]) within the scope of the instantly claimed amount so as to achieve desired ink fixation after printing and presumably sufficient dispersion ability based on the recitation of the lower amount of neutralization and the stated function “dispersant” coupled with the ordinary skilled artisan’s clear understanding that the salt groups contribute to the dispersant ability, and the remainder of the document. The carboxyl groups of the reference appear to be “carboxyl 20 groups” of the instant claim 2.

It would have been obvious to one of ordinary skill in the art at the time of the instantly claimed invention to use the instantly claimed ink components and amounts of neutralizing alkali of the instant claims because they are encompassed by the reference as stated above and would have been expected to give the properties described by the reference including

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the fixation of section [0106] and the well known properties of the vinyl ether monomers of the reference. No unexpected results commensurate in scope with the instant claims and the cited prior art are seen, particularly considering section [0106] of the reference.

The applicant's arguments of both 8/14/08 and 9/12/08 have been fully considered but are not persuasive for the reasons stated above. It is particularly noted that section [0106] of Watanabe describes the use of excess base encompassing any excess amount thereof though 1.3 times neutralization equivalent is preferred. The language of Watanabe is in terms of actual neutralization, not theoretical neutralization. The instant claims reference limitations regarding IR absorption intensity but relate these to the degree of neutralization. The instant claim's indication that the amount of alkali be related to IR absorption intensity also relates this IR absorption intensity to amount of neutralization, particularly in the old claim language, e.g. "a content of said alkali is such that , when an infrared absorption intensity ascribable to ionic groups to be formed upon addition of an excess amount of said alkali to said block copolymer is supposed to be 100%". There is no suggestion that this excess is not an equivalent excess that gives the 100% absorption. Furthermore, the applicant's declaration of 8/14/08 by Yamamoto shows that in a triblock copolymer, which is not representative of the scope of the instant claims and the cited prior art, a chemical equivalent can give a degree of neutralization of 78%. Thus, it is expected that the excess of alkali of Watanabe will give the instantly claimed amount of neutralization, particularly where a more amenable to neutralization block copolymer than that of the applicant's declaration and examples that is encompassed by the applicant's claims and Watanabe will necessarily give the instantly claimed degree of neutralization. The applicant's arguments and figures of applicant's response of 9/12/08 do not remedy the above issues

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regarding Watanabe's use of excess alkali in section [0106] not being demonstrated by the applicant to not give the claimed IR absorption nor the fact that the applicant's arguments are not commensurate in scope with the block copolymers encompassed by the instant claims and the cited prior art leading to the examiner's inability to determine if the claimed IR absorption is obtained by Watanabe for their excess of alkali with their block copolymers. This is an unpredictable art. No determination in this regard is possible from the evidence provided by the applicant. The figures of the 9/12/08 arguments lack probative value because they are not sworn to and it is unclear exactly what they related to in terms of ink specifics and how the examples related to Watanabe's inks discussed above. No evidence shows that Watanabe's inks do not have the instantly claimed absorptions. As stated above, Watanabe's inks having the excess of alkali of Watanabe would be expected to have the instantly claimed absorptions based on the applicant's declaration. This rejection is therefore maintained.

6. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat. Application Publication 2003/0027894 Sato et al. in view of US Pat. Application Publication 2004/0239738 Watanabe.

Sato discloses an aqueous ink containing a block copolymer of polyvinyl ether structure and hydrophobic and hydrophilic moieties with pigment or water insoluble dyes (sections [0045]-[0055], particularly [0055]) but is silent regarding the amount of the instantly claimed alkali. See the abstract, sections [0006]-[0147], particularly sections [0025]-[0027], [0029], which discloses hydrophilic and hydrophobic segments, [0030]-[0036], of which formula (I-k) falls within the scope of the instant claim 2, [0037]-[0046], [0055], [0070] which discloses the

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pH of the ink as being within 3-12 though the amount of alkali of the instant claims is not disclosed, [0073], and the remainder of the document.

It would have been obvious to one of ordinary skill in the art at the time of the instantly claimed invention to use the instantly claimed amount of alkali to use the instantly claimed amounts of alkali to neutralize the carboxyl groups of the polyvinyl ether block copolymer of Sato because, as would be understood by the ordinary skilled artisan from the state of the art as established by Watanabe, it is ionic salt groups which contribute to stably dispersing such polymers in aqueous media and the amount of neutralization thereof should be at least equivalent to the carboxyl groups and at most 1.3 times this amount to achieve desired fixing of the ink as taught by Watanabe at section [0106] and this result would be expected in the ink of Sato. This amount of alkali of Watanabe appears to fall within the scope of the amount of alkali of the instant claims.

The applicant's arguments of both 8/14/08 and 9/12/08 have been fully considered but are not persuasive for the reasons stated above. It is particularly noted that section [0106] of Watanabe describes the use of excess base encompassing any excess amount thereof though 1.3 times neutralization equivalent is preferred. The language of Watanabe is in terms of actual neutralization, not theoretical neutralization. The instant claims reference limitations regarding IR absorption intensity but relate these to the degree of neutralization. The instant claim's indication that the amount of alkali be related to IR absorption intensity also relates this IR absorption intensity to amount of neutralization, particularly in the old claim language, e.g. "a content of said alkali is such that, when an infrared absorption intensity ascribable to ionic groups to be formed upon addition of an excess amount of said alkali to said block copolymer is



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supposed to be 100%". There is no suggestion that this excess is not an equivalent excess that gives the 100% absorption. Furthermore, the applicant's declaration of 8/14/08 by Yamamoto shows that in a triblock copolymer, which is not representative of the scope of the instant claims and the cited prior art, a chemical equivalent can give a degree of neutralization of 78%. Thus, it is expected that the excess of alkali of Watanabe will give the instantly claimed amount of neutralization, particularly where a more amenable to neutralization block copolymer than that of the applicant's declaration and examples that is encompassed by the applicant's claims and Watanabe will necessarily give the instantly claimed degree of neutralization. The applicant's arguments and figures of applicant's response of 9/12/08 do not remedy the above issues regarding Watanabe's use of excess alkali in section [0106] not being demonstrated by the applicant to not give the claimed IR absorption nor the fact that the applicant's arguments are not commensurate in scope with the block copolymers encompassed by the instant claims and the cited prior art leading to the examiner's inability to determine if the claimed IR absorption is obtained by Watanabe for their excess of alkali with their block copolymers. This is an unpredictable art. No determination in this regard is possible from the evidence provided by the applicant. The figures of the 9/12/08 arguments lack probative value because they are not sworn to and it is unclear exactly what they related to in terms of ink specifics and how the examples related to Watanabe's inks discussed above. No evidence shows that Watanabe's inks do not have the instantly claimed absorptions. As stated above, Watanabe's inks having the excess of alkali of Watanabe would be expected to have the instantly claimed absorptions based on the applicant's declaration. pH of 12 of Sato indicates excess base relative to the acid groups of the block polymer therein and the motivation to combine with Watanabe to obtain the benefits of

Watanabe's excess of alkali of section [0106] is proper. There is no showing of unexpected results over the cited prior art stemming from the instantly claimed amount of alkali. This rejection is therefore maintained.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick D. Niland whose telephone number is 571-272-1121. The examiner can normally be reached on Monday to Thursday from 10 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Patrick D Niland/  
Primary Examiner  
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